

TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

ETAS ID: TM483824

SUBMISSION TYPE:	NEW ASSIGNMENT		
NATURE OF CONVEYANCE:	Amended and Restated Patent and Trademark Security Agreement		
CONVEYING PARTY DATA			
Name	Formerly	Execution Date	Entity Type
Dasan Zhone Solutions, Inc. (fka Zhone Technologies, Inc.)		07/12/2018	Corporation: DELAWARE
RECEIVING PARTY DATA			
Name:	Wells Fargo Bank, National Association		
Street Address:	2450 Colorado Avenue, Suite 3000W		
City:	Santa Monica		
State/Country:	CALIFORNIA		
Postal Code:	90404		
Entity Type:	National Banking Association: UNITED STATES		
PROPERTY NUMBERS Total: 13			
Property Type	Number	Word Mark	
Registration Number:	2608096	SLMS	
Registration Number:	2586521	ZMS	
Registration Number:	2725112	MALC	
Registration Number:	2725113	ZHONE	
Registration Number:	3390835	ZNID	
Registration Number:	3725214	MXK	
Registration Number:	4455296	BANDWIDTH CHANGES EVERYTHING	
Registration Number:	4313579	ZHONE FIBERCELL	
Registration Number:	4252361	IP ZHONE	
Registration Number:	4745309	FIBERLAN	
Registration Number:	2248498	PARADYNE	
Registration Number:	2885561	REACHDSL	
Registration Number:	2856212	BITSTORM	
CORRESPONDENCE DATA			
Fax Number:	2027393001		
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>			
Phone:	2027395866		
Email:	felicia.gordon@morganlewis.com		
TRADEMARK			

CH \$340.00 2608096

Correspondent Name: Morgan, Lewis & Bockius LLP
Address Line 1: 1111 Pennsylvania Avenue, NW
Address Line 4: Washington, D.C. 20004

ATTORNEY DOCKET NUMBER: 058438-0183

NAME OF SUBMITTER: Felicia D. Gordon

SIGNATURE: /Felicia D. Gordon/

DATE SIGNED: 07/30/2018

Total Attachments: 16

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AMENDED AND RESTATED PATENT AND TRADEMARK SECURITY AGREEMENT

This Amended and Restated Patent and Trademark Security Agreement (the "Agreement"), dated as of July 12, 2018, is made by and between Dasan Zhone Solutions, Inc., a Delaware corporation (fka Zhone Technologies, Inc., the "Company"), having a business location at the address set forth below next to its signature, and Wells Fargo Bank, National Association ("Wells Fargo"), having a business location at the address set forth below next to its signature.

Recitals

A. Company, certain Affiliates of the Company, and Wells Fargo are parties to a Credit and Security Agreement, dated March 13, 2012 (as heretofore amended, the "Original Domestic Credit Agreement"), and a Credit and Security Agreement (Ex-Im Subfacility), dated March 13, 2012 (as heretofore amended, "Original Ex-Im Credit Agreement" and, together with the Original Domestic Credit Agreement, the "Original Credit Agreements").

B. In connection with the Original Credit Agreements, Company and Wells Fargo entered into a Patent and Trademark Security Agreement, dated March 13, 2012 (the "Original Patent and Trademark Security Agreement").

C. Contemporaneously with this Agreement, Company, certain Affiliates of the Company, and Wells Fargo are (i) amending and restating the Original Domestic Credit Agreement in its entirety pursuant to that certain Amended and Restated Credit and Security Agreement of even date herewith (as the same may be in effect from time to time, the "A&R Domestic Credit Agreement"), and (ii) amending and restating the Original Ex-Im Credit Agreement in its entirety pursuant to that certain Amended and Restated Credit and Security Agreement (Ex-Im Subfacility) of even date herewith (as the same may be in effect from time to time, the "A&R Ex-Im Credit Agreement"; the A&R Domestic Credit Agreement and the A&R Ex-Im Credit Agreement are sometimes referred to herein individually as a "Credit Agreement" and collectively as the "Credit Agreements").

D. In order to induce Wells Fargo to enter into the Credit Agreements, among other things, Company has agreed to amend and restate the Original Patent and Trademark Security Agreement, by executing and delivering this Agreement to Wells Fargo.

ACCORDINGLY, in consideration of the mutual covenants contained in the Loan Documents and herein, the undersigned hereby agree that the Original Patent and Trademark Security Agreement shall be, and hereby is, amended and restated in its entirety to read as follows:

1. Definitions. All terms defined in the Recitals hereto or in the Credit Agreements that are not otherwise defined herein shall have the meanings given to them in the Credit Agreements. In addition, the following terms have the meanings set forth below:

"Patents" means all of Company's right, title and interest in and to: (i) patents or applications for patents, (ii) licenses, fees or royalties payable to Company with respect to

each, and (iii) the right to sue for past infringement and damages therefor, all as presently existing or hereafter arising or acquired, including without limitation the patents listed on Exhibit A.

“Security Interest” has the meaning given in Section 2.

“Trademarks” means all of Company’s right, title and interest in and to:

- (i) trademarks, service marks, collective membership marks, registrations and applications for registration for each, and the respective goodwill associated with each,
- (ii) licenses, fees or royalties payable to Company with respect to each, and (iii) the right to sue for past, present and future infringement, dilution and damages therefor, all as presently existing or hereafter arising or acquired, including, without limitation, the marks listed on Exhibit B.

2. Security Interest. Company hereby irrevocably pledges and assigns to, and grants Wells Fargo a security interest (the “Security Interest”) with power of sale to the extent permitted by law, in the Patents and in the Trademarks to secure payment of the Obligations. As set forth in the Credit Agreements, the Security Interest is coupled with a security interest in substantially all of the personal property of Company. This Agreement grants only the Security Interest herein described, is not intended to and does not affect any present transfer of title of any trademark registration or application and makes no assignment and grants no right to assign or perform any other action with respect to any intent to use trademark application, unless such action is permitted under 15 U.S.C. §1060.

3. Representations, Warranties and Agreements. Company represents, warrants and agrees as follows:

3.1 **Existence; Authority**. Company is a corporation duly organized, validly existing and in good standing under the laws of its state of incorporation, and this Agreement has been duly and validly authorized by all necessary corporate action on the part of Company.

3.2 **Patents**. Exhibit A accurately lists all Patents owned or controlled by Company as of the date hereof, or to which Company has a right as of the date hereof to have assigned to it, and accurately reflects the existence and status of applications and letters patent pertaining to the Patents as of the date hereof. If after the date hereof, Company owns, controls or has a right to have assigned to it any Patents not listed on Exhibit A, or if Exhibit A ceases to accurately reflect the existence and status of applications and letters patent pertaining to the Patents, then Company shall from time to time, but no less frequently than quarterly, provide written notice to Wells Fargo with a replacement Exhibit A, which upon acceptance by Wells Fargo shall become part of this Agreement.

3.3 **Trademarks**. Exhibit B accurately lists all Trademarks owned or controlled by Company as of the date hereof and accurately reflects the existence and status of Trademarks and all applications and registrations pertaining thereto as of the date hereof; provided, however, that Exhibit B need not list common law marks (i.e., Trademarks for which there are no applications or registrations) which are not material to Company’s business. If after the date hereof,

Company owns or controls any Trademarks not listed on Exhibit B (other than common law marks which are not material to Company's business), or if Exhibit B ceases to accurately reflect the existence and status of applications and registrations pertaining to the Trademarks, then Company shall from time to time, but no less frequently than quarterly, provide written notice to Wells Fargo with a replacement Exhibit B, which upon acceptance by Wells Fargo shall become part of this Agreement.

3.4 **Subsidiaries.** If after the date hereof any wholly-owned subsidiary of the Company wholly owns, or obtains a right to have assigned to it the entire ownership interest in any Patents or Trademarks, which are not already subject to a patent and trademark security agreement substantially in the form of this Agreement, then Company shall notify Wells Fargo of such item(s) and cause such wholly-owned subsidiary of Company to execute and deliver to Wells Fargo a patent and trademark security agreement substantially in the form of this Agreement.

3.5 **Title.** Company has absolute title to each Patent and each Trademark listed on Exhibits A and B, free and clear of all Liens except Permitted Liens.

3.6 **No Sale.** Except as permitted under the Credit Agreements, Company will not assign, transfer, encumber or otherwise dispose of the Patents or Trademarks, or any interest therein, without Wells Fargo's prior written consent.

3.7 **Defense.** Except as permitted under the Credit Agreements, Company will at its own expense and using commercially reasonable efforts, protect and defend the Patents and Trademarks (other than Patents or Trademarks that are no longer useful or necessary in Company's business, and which are immaterial in value) against all claims or demands of all Persons other than those holding Permitted Liens.

3.8 **Maintenance.** Except as permitted under the Credit Agreements, Company will at its own expense maintain the Patents and the Trademarks to the extent commercially and reasonably advisable in its business including, but not limited to, filing all applications to obtain letters patent or trademark registrations and all necessary affidavits, maintenance fees, annuities, and renewals with respect to letters patent, trademark registrations and applications therefor. Except as permitted under the Credit Agreements, Company covenants that it will not abandon nor fail to pay any maintenance fee or annuity due and payable on any Patent or Trademark that is material to the business of the Company, nor fail to file any required affidavit or renewal in support thereof, without first providing Wells Fargo: (i) 30 days written notice to allow Wells Fargo to timely pay any such maintenance fees or annuities which may become due on any Patents or Trademarks, or to file any affidavit or renewal with respect thereto, and (ii) a separate written power of attorney or other authorization to pay such maintenance fees or annuities, or to file such affidavit or renewal, should such authorization be necessary or desirable.

3.9 **Wells Fargo's Right to Take Action.** If Company fails to perform or observe any of its covenants or agreements set forth in this Section 3, and if such failure continues for a period of ten (10) calendar days after Wells Fargo gives Company written notice thereof (or, in

the case of the agreements contained in Section 3.8, immediately upon the occurrence of such failure, without notice or lapse of time), or if Company notifies Wells Fargo that it intends to abandon a Patent or Trademark, Wells Fargo may (but need not) perform or observe such covenant or agreement or take steps to prevent such intended abandonment on behalf and in the name, place and stead of Company (or, at Wells Fargo's option, in Wells Fargo's own name) and may (but need not) take any and all other actions which Wells Fargo may reasonably deem necessary to cure or correct such failure or prevent such intended abandonment.

3.10 Costs and Expenses. Except to the extent that the effect of such payment would be to render any loan or forbearance of money usurious or otherwise illegal under any applicable law, Company shall pay Wells Fargo on demand the amount of all moneys expended and all costs and expenses (including reasonable attorneys' fees and disbursements) incurred by Wells Fargo in connection with or as a result of Wells Fargo's taking action under Section 3.9 or exercising its rights under Section 6, together with interest thereon from the date expended or incurred by Wells Fargo at the Default Rate.

3.11 Power of Attorney. To facilitate Wells Fargo's taking action under Section 3.9 and exercising its rights under Section 6, Company hereby irrevocably appoints (which appointment is coupled with an interest) Wells Fargo, or its delegate, as the attorney-in-fact of Company with the right (but not the duty) from time to time to create, prepare, complete, execute, deliver, endorse or file, in the name and on behalf of Company, any and all instruments, documents, applications, financing statements, and other agreements and writings required to be obtained, executed, delivered or endorsed by Company under this Section 3, or, necessary for Wells Fargo, upon the occurrence of an Event of Default and during the Default Period commenced thereby, to enforce or use the Patents or Trademarks or to grant or issue any exclusive or non-exclusive license under the Patents or Trademarks to any third party, or to sell, assign, transfer, pledge, encumber or otherwise transfer title in or dispose of the Patents or Trademarks to any third party. Company hereby ratifies all that such attorney shall lawfully do or cause to be done by virtue hereof. The power of attorney granted herein shall terminate upon the termination of the Credit Agreements as provided therein and the payment and performance of all Obligations.

4. Company's Use of the Patents and Trademarks. Company shall be permitted to control and manage the Patents and Trademarks, including the right to exclude others from making, using or selling items covered by the Patents and Trademarks and any licenses thereunder, in the same manner and with the same effect as if this Agreement had not been entered into, so long as no Event of Default occurs and remains uncured.

5. Events of Default. Each of the following occurrences shall constitute an event of default under this Agreement (herein called "Event of Default"): (a) an Event of Default, as defined in the either of the Credit Agreements, shall occur; or (b) Company shall fail promptly to observe or perform any covenant or agreement in this Agreement binding on Company, and such failure continues for a period of 30 days after the earlier of (i) the date on which such failure shall first become known to or should have been known by any officer of Company or (ii) the date on which written notice thereof is given to Company by Wells Fargo; or (c) any of the

representations or warranties contained in Section 3 shall prove to have been incorrect in any material respect when made.

6. Remedies. Upon the occurrence of an Event of Default and during the Default Period commenced thereby, Wells Fargo may, at its option, take any or all of the following actions:

6.1 Wells Fargo may exercise any or all remedies available under the Credit Agreements.

6.2 Wells Fargo may sell, assign, transfer, pledge, encumber or otherwise dispose of the Patents and Trademarks.

6.3 Wells Fargo may enforce the Patents and Trademarks and any licenses thereunder, and if Wells Fargo shall commence any suit for such enforcement, Company shall, at the request of Wells Fargo, do any and all lawful acts and execute any and all proper documents required by Wells Fargo in aid of such enforcement.

7. Miscellaneous. This Agreement can be waived, modified, amended, terminated or discharged, and the Security Interest can be released, only explicitly in a writing signed by Wells Fargo. A waiver signed by Wells Fargo shall be effective only in the specific instance and for the specific purpose given. Mere delay or failure to act shall not preclude the exercise or enforcement of any of Wells Fargo's rights or remedies. All rights and remedies of Wells Fargo shall be cumulative and may be exercised singularly or concurrently, at Wells Fargo's option, and the exercise or enforcement of any one such right or remedy shall neither be a condition to nor bar the exercise or enforcement of any other. All notices to be given to Company or Wells Fargo under this Agreement shall be given in the manner and with the effect provided in the Credit Agreements. Wells Fargo shall not be obligated to preserve any rights Company may have against prior parties, to realize on the Patents and Trademarks at all or in any particular manner or order, or to apply any cash proceeds of Patents and Trademarks in any particular order of application. This Agreement shall be binding upon and inure to the benefit of Company and Wells Fargo and their respective participants, successors and assigns and shall take effect when signed by Company and delivered to Wells Fargo, and Company waives notice of Wells Fargo's acceptance hereof. Wells Fargo may execute this Agreement if appropriate for the purpose of filing, but the failure of Wells Fargo to execute this Agreement shall not affect or impair the validity or effectiveness of this Agreement. A carbon, photographic or other reproduction of this Agreement or of any financing statement signed by Company shall have the same force and effect as the original for all purposes of a financing statement. If any provision or application of this Agreement is held unlawful or unenforceable in any respect, such illegality or unenforceability shall not affect other provisions or applications which can be given effect and this Agreement shall be construed as if the unlawful or unenforceable provision or application had never been contained herein or prescribed hereby. All representations and warranties contained in this Agreement shall survive the execution, delivery and performance of this Agreement and the creation and payment of the Obligations.

8. CHOICE OF LAW AND VENUE; JURY TRIAL WAIVER.

8.1 THE VALIDITY OF THIS AGREEMENT, THE CONSTRUCTION, INTERPRETATION, AND ENFORCEMENT HEREOF, AND THE RIGHTS OF THE PARTIES HERETO WITH RESPECT TO ALL MATTERS ARISING HEREUNDER OR RELATED HERETO AS WELL AS ALL CLAIMS, CONTROVERSIES OR DISPUTES ARISING UNDER OR RELATED TO THIS AGREEMENT SHALL BE DETERMINED UNDER, GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF CALIFORNIA.

8.2 THE PARTIES AGREE THAT ALL ACTIONS OR PROCEEDINGS ARISING IN CONNECTION WITH THIS AGREEMENT MAY BE TRIED AND LITIGATED IN THE STATE AND, TO THE EXTENT PERMITTED BY APPLICABLE LAW, FEDERAL COURTS LOCATED IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA; PROVIDED, THAT ANY SUIT SEEKING ENFORCEMENT AGAINST ANY COLLATERAL OR OTHER PROPERTY MAY BE BROUGHT, AT WELLS FARGO'S OPTION, IN THE COURTS OF ANY JURISDICTION WHERE WELLS FARGO ELECTS TO BRING SUCH ACTION OR WHERE SUCH COLLATERAL OR OTHER PROPERTY MAY BE FOUND. COMPANY AND WELLS FARGO WAIVE, TO THE EXTENT PERMITTED UNDER APPLICABLE LAW, ANY RIGHT EACH MAY HAVE TO ASSERT THE DOCTRINE OF FORUM NON CONVENIENS OR TO OBJECT TO VENUE TO THE EXTENT ANY PROCEEDING IS BROUGHT IN ACCORDANCE WITH THIS SECTION 8.2.

8.3 TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, COMPANY AND WELLS FARGO HEREBY WAIVE THEIR RESPECTIVE RIGHTS, IF ANY, TO A JURY TRIAL OF ANY CLAIM, CONTROVERSY, DISPUTE, OR CAUSE OF ACTION DIRECTLY OR INDIRECTLY BASED UPON OR ARISING OUT OF THIS AGREEMENT OR ANY OF THE TRANSACTIONS CONTEMPLATED HEREIN, INCLUDING CONTRACT CLAIMS, TORT CLAIMS, BREACH OF DUTY CLAIMS, AND ALL OTHER COMMON LAW OR STATUTORY CLAIMS (EACH, A "CLAIM"). COMPANY AND WELLS FARGO REPRESENT THAT EACH HAS REVIEWED THIS WAIVER AND EACH KNOWINGLY AND VOLUNTARILY WAIVES ITS JURY TRIAL RIGHTS FOLLOWING CONSULTATION WITH LEGAL COUNSEL. IN THE EVENT OF LITIGATION, A COPY OF THIS AGREEMENT MAY BE FILED AS A WRITTEN CONSENT TO A TRIAL BY THE COURT.

8.4 NO CLAIM MAY BE MADE BY COMPANY AGAINST WELLS FARGO, OR ANY AFFILIATE, DIRECTOR, OFFICER, EMPLOYEE, COUNSEL, REPRESENTATIVE, AGENT, OR ATTORNEY-IN-FACT OF ANY OF THEM FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL, OR PUNITIVE DAMAGES IN RESPECT OF ANY CLAIM FOR BREACH OF CONTRACT OR ANY OTHER THEORY OF LIABILITY ARISING OUT OF OR RELATED TO THE TRANSACTIONS CONTEMPLATED BY THIS AGREEMENT, OR ANY ACT, OMISSION, OR EVENT OCCURRING IN CONNECTION HERewith, AND COMPANY HEREBY WAIVES,

RELEASES, AND AGREES NOT TO SUE UPON ANY CLAIM FOR SUCH DAMAGES, WHETHER OR NOT ACCRUED AND WHETHER OR NOT KNOWN OR SUSPECTED TO EXIST IN ITS FAVOR.

8.5 IN THE EVENT ANY LEGAL PROCEEDING IS FILED IN A COURT OF THE STATE OF CALIFORNIA (THE "COURT") BY OR AGAINST ANY PARTY HERETO IN CONNECTION WITH ANY CLAIM AND THE WAIVER SET FORTH IN SECTION 8.3 ABOVE IS NOT ENFORCEABLE IN SUCH PROCEEDING, THE PARTIES HERETO AGREE AS FOLLOWS:

(a) WITH THE EXCEPTION OF THE MATTERS SPECIFIED IN SUBCLAUSE (b) BELOW, ANY CLAIM SHALL BE DETERMINED BY A GENERAL REFERENCE PROCEEDING IN ACCORDANCE WITH THE PROVISIONS OF CALIFORNIA CODE OF CIVIL PROCEDURE SECTIONS 638 THROUGH 645.1. THE PARTIES INTEND THIS GENERAL REFERENCE AGREEMENT TO BE SPECIFICALLY ENFORCEABLE. VENUE FOR THE REFERENCE PROCEEDING SHALL BE IN THE COUNTY OF LOS ANGELES, CALIFORNIA.

(b) THE FOLLOWING MATTERS SHALL NOT BE SUBJECT TO A GENERAL REFERENCE PROCEEDING: (A) FORECLOSURE OR ANY SIMILAR REMEDY OF ANY SECURITY INTERESTS IN REAL OR PERSONAL PROPERTY, (B) EXERCISE OF SELF-HELP REMEDIES (INCLUDING SET-OFF OR RECOUPMENT), (C) APPOINTMENT OF A RECEIVER, AND (D) TEMPORARY, PROVISIONAL, OR ANCILLARY REMEDIES (INCLUDING WRITS OF ATTACHMENT, WRITS OF POSSESSION, TEMPORARY RESTRAINING ORDERS, OR PRELIMINARY INJUNCTIONS). THIS AGREEMENT DOES NOT LIMIT THE RIGHT OF ANY PARTY TO EXERCISE OR OPPOSE ANY OF THE RIGHTS AND REMEDIES DESCRIBED IN CLAUSES (A) - (D) AND ANY SUCH EXERCISE OR OPPOSITION DOES NOT WAIVE THE RIGHT OF ANY PARTY TO PARTICIPATE IN A REFERENCE PROCEEDING PURSUANT TO THIS AGREEMENT WITH RESPECT TO ANY OTHER MATTER.

(c) UPON THE WRITTEN REQUEST OF ANY PARTY, THE PARTIES SHALL SELECT A SINGLE REFEREE, WHO SHALL BE A RETIRED JUDGE OR JUSTICE. IF THE PARTIES DO NOT AGREE UPON A REFEREE WITHIN 10 DAYS OF SUCH WRITTEN REQUEST, THEN, ANY PARTY SHALL HAVE THE RIGHT TO REQUEST THE COURT TO APPOINT A REFEREE PURSUANT TO CALIFORNIA CODE OF CIVIL PROCEDURE SECTION 640(b). THE REFEREE SHALL BE APPOINTED TO SIT WITH ALL OF THE POWERS PROVIDED BY LAW. PENDING APPOINTMENT OF THE REFEREE, THE COURT SHALL HAVE THE POWER TO ISSUE TEMPORARY OR PROVISIONAL REMEDIES.

(d) EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE REFEREE SHALL DETERMINE THE MANNER IN WHICH THE REFERENCE

PROCEEDING IS CONDUCTED INCLUDING THE TIME AND PLACE OF HEARINGS, THE ORDER OF PRESENTATION OF EVIDENCE, AND ALL OTHER QUESTIONS THAT ARISE WITH RESPECT TO THE COURSE OF THE REFERENCE PROCEEDING. ALL PROCEEDINGS AND HEARINGS CONDUCTED BEFORE THE REFEREE, EXCEPT FOR TRIAL, SHALL BE CONDUCTED WITHOUT A COURT REPORTER, EXCEPT WHEN ANY PARTY SO REQUESTS A COURT REPORTER AND A TRANSCRIPT IS ORDERED, A COURT REPORTER SHALL BE USED AND THE REFEREE SHALL BE PROVIDED A COURTESY COPY OF THE TRANSCRIPT. THE PARTY MAKING SUCH REQUEST SHALL HAVE THE OBLIGATION TO ARRANGE FOR AND PAY THE COSTS OF THE COURT REPORTER, PROVIDED THAT SUCH COSTS, ALONG WITH THE REFEREE'S FEES, SHALL ULTIMATELY BE BORNE BY THE PARTY WHO DOES NOT PREVAIL, AS DETERMINED BY THE REFEREE.

(e) THE REFEREE MAY REQUIRE ONE OR MORE PREHEARING CONFERENCES. THE PARTIES HERETO SHALL BE ENTITLED TO DISCOVERY, AND THE REFEREE SHALL OVERSEE DISCOVERY IN ACCORDANCE WITH THE RULES OF DISCOVERY, AND SHALL ENFORCE ALL DISCOVERY ORDERS IN THE SAME MANNER AS ANY TRIAL COURT JUDGE IN PROCEEDINGS AT LAW IN THE STATE OF CALIFORNIA.

(f) THE REFEREE SHALL APPLY THE RULES OF EVIDENCE APPLICABLE TO PROCEEDINGS AT LAW IN THE STATE OF CALIFORNIA AND SHALL DETERMINE ALL ISSUES IN ACCORDANCE WITH CALIFORNIA SUBSTANTIVE AND PROCEDURAL LAW. THE REFEREE SHALL BE EMPOWERED TO ENTER EQUITABLE AS WELL AS LEGAL RELIEF AND RULE ON ANY MOTION WHICH WOULD BE AUTHORIZED IN A TRIAL, INCLUDING MOTIONS FOR DEFAULT JUDGMENT OR SUMMARY JUDGMENT. THE REFEREE SHALL REPORT HIS OR HER DECISION, WHICH REPORT SHALL ALSO INCLUDE FINDINGS OF FACT AND CONCLUSIONS OF LAW. THE REFEREE SHALL ISSUE A DECISION AND PURSUANT TO CALIFORNIA CODE OF CIVIL PROCEDURE, SECTION 644, THE REFEREE'S DECISION SHALL BE ENTERED BY THE COURT AS A JUDGMENT IN THE SAME MANNER AS IF THE ACTION HAD BEEN TRIED BY THE COURT. THE FINAL JUDGMENT OR ORDER FROM ANY APPEALABLE DECISION OR ORDER ENTERED BY THE REFEREE SHALL BE FULLY APPEALABLE AS IF IT HAS BEEN ENTERED BY THE COURT.

(g) THE PARTIES RECOGNIZE AND AGREE THAT ALL CLAIMS RESOLVED IN A GENERAL REFERENCE PROCEEDING PURSUANT HERETO WILL BE DECIDED BY A REFEREE AND NOT BY A JURY. AFTER CONSULTING (OR HAVING HAD THE OPPORTUNITY TO CONSULT) WITH COUNSEL OF THEIR OWN CHOICE, EACH PARTY HERETO KNOWINGLY AND VOLUNTARILY AND FOR THEIR MUTUAL BENEFIT AGREES THAT THIS REFERENCE PROVISION

SHALL APPLY TO ANY DISPUTE BETWEEN THEM THAT ARISES OUT OF OR IS RELATED TO THIS AGREEMENT.

9. Amendment and Restatement. As of the date of this Agreement, this Agreement shall amend and restate and supersede the Original Patent and Trademark Security Agreement in its entirety, except as otherwise provided in this Section 9. On the date of this Agreement, the grant of security interests and Liens in the Collateral by Company under the Original Patent and Trademark Security Agreement and the other "Loan Documents" (as defined in the Credit Agreements) shall continue under this Agreement and the other Loan Documents, and shall not in any event be terminated, extinguished or annulled but shall hereafter continue to be in full force and effect and be governed by this Agreement and the other Loan Documents. All Obligations under the Original Patent and Trademark Security Agreement and the other Loan Documents shall continue to be outstanding except as expressly modified by this Agreement or the other Loan Documents and shall be governed in all respects by this Agreement and the other Loan Documents, it being agreed and understood that this Agreement represents a modification of, and does not constitute a novation, satisfaction or payment of any Obligation under, the Original Patent and Trademark Security Agreement or any other Loan Documents, nor does it operate as a waiver of any right, power or remedy of Wells Fargo under any Loan Documents. Company acknowledges, represents and warrants that, as of the date hereof, it has no claims, defenses or offsets with respect to the Original Patent and Trademark Security Agreement or any of the Loan Documents and that immediately prior to the effectiveness of this Agreement, the Original Patent and Trademark Security Agreement and such other Loan Documents are valid, binding and enforceable in accordance with the terms thereof.

[Signatures on next page]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Patent and Trademark Security Agreement as of the date written above.

Dasan Zhone Solutions, Inc.
7195 Oakport Street
Oakland, California 94621
Attn: Chief Financial Officer

DASAN ZHONE SOLUTIONS, INC. (fka
Zhone Technologies, Inc.)

By: _____
Print Name: Michael Golomb
Its: CFO

Wells Fargo Bank, National Association
2450 Colorado Avenue, Suite 3000W
Santa Monica, California 90404
Attn: Relationship Manager - Dasan Zhone

WELLS FARGO BANK, NATIONAL
ASSOCIATION

By: _____
Print Name: Harry Joe
Its: Authorized Signatory

WFB/Dasan Zhone (Dasan Zhone Solutions, Inc.)
Amended and Restated Patent and Trademark Security Agreement
DB2/ 33528792

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Patent and Trademark Security Agreement as of the date written above.

Dasan Zhone Solutions, Inc.
7195 Oakport Street
Oakland, California 94621
Attn: Chief Financial Officer

DASAN ZHONE SOLUTIONS, INC. (fka
Zhone Technologies, Inc.)

By: _____
Print Name:
Its:

Wells Fargo Bank, National Association
2450 Colorado Avenue, Suite 3000W
Santa Monica, California 90404
Attn: Relationship Manager – Dasan Zhone

WELLS FARGO BANK, NATIONAL
ASSOCIATION

By:  _____
Print Name: Harry Joe
Its: Authorized Signatory

EXHIBIT A

UNITED STATES PATENTS AND APPLICATIONS

<u>United States Patent Title</u>	<u>Patent Number</u>	<u>Application Number</u>
<u>SYSTEM FOR REAL TIME VOICE QUALITY MEASUREMENT IN VOICE OVER PACKET NETWORK</u>	<u>7197010</u>	<u>09/885,373</u>

EXHIBIT B

UNITED STATES ISSUED TRADEMARKS, SERVICE MARKS
AND COLLECTIVE MEMBERSHIP MARKS

<u>United States Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
<u>SLMS</u>	<u>76/110,937</u>	<u>2,608,096</u>	<u>8-13-2002</u>	<u>8-13-2022</u>
<u>ZMS</u>	<u>76/174,513</u>	<u>2,586,521</u>	<u>6-25-2002</u>	<u>6-25-2022</u>
<u>MALC</u>	<u>76/175,453</u>	<u>2,725,112</u>	<u>6-10-2003</u>	<u>6-10-2023</u>
<u>ZHONE</u>	<u>76/175,462</u>	<u>2,725,113</u>	<u>6-10-2003</u>	<u>6-10-2023</u>
<u>Znid</u>	<u>77/067,082</u>	<u>3,390,835</u>	<u>3-04-2008</u>	<u>3-04-2028</u>
<u>MXK</u>	<u>77/739,166</u>	<u>3,725,214</u>	<u>12-15-2009</u>	<u>12-15-2029</u>
<u>BANDWIDTH CHNAGES EVERYTHING</u>	<u>85/030,477</u>	<u>4,455,296</u>	<u>12-24-2013</u>	<u>12-24-2023</u>
<u>ZHONE FIBERCELL</u>	<u>85/245,648</u>	<u>4,313,579</u>	<u>4-02-2013</u>	<u>4-02-2023</u>
<u>IP ZHONE</u>	<u>85/295,116</u>	<u>4,252,361</u>	<u>12-04-2012</u>	<u>12-04-2022</u>
<u>FIBERLAN</u>	<u>86/126,754</u>	<u>4,745,309</u>	<u>5-26-2015</u>	<u>5-26-2025</u>
<u>DZS EVERY CONNECTION MATTERS (stylized and/or with design)</u>	<u>87/440,078</u>			
<u>DZS (stylized and/or with design)</u>	<u>87/440,114</u>			
<u>DZS FIBERCELL</u>	<u>87/911,757</u>			
<u>VNOS</u>	<u>87/923,526</u>			
<u>PARADYNE (stylized and/or with design)</u>	<u>75/184,564</u>	<u>2,248,498</u>	<u>6-01-1999</u>	<u>6-01-2019</u>
<u>REACHDSL</u>	<u>76/197,073</u>	<u>2,885,561</u>	<u>9-21-2004</u>	<u>9-21-2024</u>

<u>BITSTORM</u>	<u>76/060,907</u>	<u>2,856,212</u>	<u>6-22-2004</u>	<u>6-22-2024</u>
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<u>Australia Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
<u>ZHONE</u>	<u>833160</u>	<u>833160</u>	<u>3-30-2001</u>	<u>4-28-2020</u>
<u>Z and design</u>	<u>833161</u>	<u>833161</u>	<u>3-30-2001</u>	<u>4-28-2020</u>

<u>Canada Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
<u>ZHONE</u>	<u>1056021</u>	<u>TMA574176</u>	<u>1-22-2003</u>	<u>1-22-2033</u>
<u>Z and design</u>	<u>1056022</u>	<u>TMA574177</u>	<u>1-22-2003</u>	<u>1-22-2033</u>

<u>Chile Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
<u>ZHONE</u>	<u>493.105</u>	<u>587.379</u>	<u>1-10-2001</u>	<u>1-10-2021</u>
<u>Z and design</u>	<u>493.107</u>	<u>587.381</u>	<u>1-10-2001</u>	<u>1-10-2021</u>

<u>China (People's Republic) Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
<u>Z ZHONE</u>	<u>2000076059</u>	<u>1606363</u>	<u>7-21-2001</u>	<u>7-20-2021</u>
<u>Z and design</u>	<u>2000076060</u>	<u>1606365</u>	<u>7-21-2001</u>	<u>7-20-2021</u>

<u>European Union (Community) Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
<u>Z ZHONE</u>	<u>1683705</u>	<u>1683705</u>	<u>8-03-2001</u>	<u>5-31-2020</u>
<u>MXK</u>	<u>008338394</u>	<u>008338394</u>	<u>12-23-2009</u>	<u>6-03-2019</u>

<u>India Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
<u>Z ZHONE</u>	<u>928854</u>	<u>928854</u>	<u>5-31-2000</u>	<u>5-31-2020</u>
<u>Z and design</u>	<u>928855</u>	<u>928855</u>	<u>4-21-2005</u>	<u>5-31-2020</u>

<u>Indonesia Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
<u>Z ZHONE</u>	<u>477920</u>	<u>477920</u>	<u>5-25-2001</u>	<u>5-31-2020</u>
<u>Z and design</u>	<u>477919</u>	<u>477919</u>	<u>5-25-2001</u>	<u>5-31-2020</u>

<u>Japan Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
<u>Z ZHONE</u>	<u>2000-044391</u>	<u>4466214</u>	<u>4-13-2001</u>	<u>4-13-2021</u>
<u>Z and design</u>	<u>2000-044420</u>	<u>4466217</u>	<u>4-20-2001</u>	<u>4-20-2021</u>

<u>Korea Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
<u>Z ZHONE</u>	<u>2000-25959</u>	<u>511688</u>	<u>2-01-2002</u>	<u>2-01-2022</u>
<u>Z and design</u>	<u>2000-25960</u>	<u>511689</u>	<u>2-01-2002</u>	<u>2-01-2022</u>

<u>Mexico Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
<u>Z ZHONE</u>	<u>750581</u>	<u>750581</u>	<u>6-14-2002</u>	<u>6-14-2022</u>
<u>Z and design</u>	<u>454566</u>	<u>454566</u>	<u>10-25-2000</u>	<u>10-25-2020</u>

<u>Russia Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
ZHONE	<u>2000712807</u>	<u>210414</u>	<u>4-04-2002</u>	<u>5-30-2020</u>
<u>Z and design</u>	<u>2000712724</u>	<u>210339</u>	<u>4-02-2002</u>	<u>5-30-2020</u>

<u>Singapore Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
Z ZHONE	<u>T00/07159Z</u>	<u>T00/07159Z</u>	<u>4-29-2000</u>	<u>4-29-2020</u>
<u>Z and design</u>	<u>T00/07160C</u>	<u>T00/07160C</u>	<u>4-29-2000</u>	<u>4-29-2020</u>

<u>South Africa Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
Z ZHONE	<u>2000/10766</u>	<u>2000/10766</u>	<u>12-19-2003</u>	<u>5-30-2020</u>
<u>Z and design</u>	<u>2000/10767</u>	<u>2000/10767</u>	<u>12-19-2003</u>	<u>5-30-2020</u>

<u>Switzerland Trademark</u>	<u>Application Number</u>	<u>Registration Number</u>	<u>Registration Date</u>	<u>Expiration Date</u>
Z ZHONE	<u>06495/2000</u>	<u>478.136</u>	<u>11-07-2000</u>	<u>5-30-2020</u>